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TITLE: Electrostatic delta-phi micro-lens for low energy
particle beams - used
in electron- or ion-microscopes

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ABSTRACTED-PUB-NO: EP 432337A

BASIC-ABSTRACT: A Delta-Phi microlens for low energy particle beams, combined for operation with a source of particles, i.e. a sharply pointed tip, and comprising at least 2 metal foils arranged in close proximity with the tip, and each having a hole exactly aligned with the axis of the tip. One of the metal foils serves as a substrate plate, and the second foil is coated onto at least part of that surface of the substrate plate which is facing away from the tip. The materials of the 2 metal foils are chosen such that in combination their work function difference (delta-phi) is greatest.

Pref. the material of the substrate plate is a transition metal, and more pref. is an alloy of 2 or more transition metals, while the material of the second foil is from groups IA and IIA.

USE/ADVANTAGE - Electrostatic microlens for low energy particle beams for use in electron or ion microscopes.

ABSTRACTED-PUB-NO: EP 432337B

EQUIVALENT-ABSTRACTS: Delta-Phi microlens for low-energy particle beams, comprising at least two metal foils (3,4) each having a hole (2) aligned with each other and to become aligned with the beam axis, characterized in that a first one of said metal foils (3,4) serves as a substrate plate (3), that a

second one (4) of said metal foils is coated onto at least part of a surface of said substrate plate (3), and that the materials of said first and second metal foils (3,4) are chosen to get a difference in work function ($\Delta\phi$) in order to deflect the particles.

US 5059804A

Delta-pin microlens for use in electron or ion microscopes has a sharply pointed tip (1), as source of particles, aligned with a small hole in a thin metal foil (3), e.g. 1 mm thick. A layer (4) of metal different from the foil is coated on the side facing away from the tip, with a thickness, e.g. of 100nm. Combined materials of the foil and coating have a work function difference of about 3 eV.

ADVANTAGE - Insulating spacings between lens elements are not required.
@(4pp)@

CHOSEN-DRAWING: Dwg.1/1 Dwg.1/1

TITLE-TERMS:
ELECTROSTATIC DELTA PHI MICRO LENS LOW ENERGY PARTICLE BEAM
ELECTRON ION
MICROSCOPE

DERWENT-CLASS: L03 S03 V05

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